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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,594

07/10/2006

Hirokazu Taniguchi

52433/852

4328

26646 7590 07/13/2010  
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EXAMINER

YANG, JIE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/13/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/585,594	TANIGUCHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JIE YANG	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 2-7 have been cancelled; Claim 1 and specification (table 3 on page 19 of the instant specification) have been amended. Claim 1 is pending in application.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/14/2010 has been entered.

#### ***Status of the Previous Rejection***

The previous rejections of claim 1 under second paragraph of 35 U.S.C. 112 first paragraph, as failing to comply with the written description requirement is withdrawn in view of the amendment filed on 4/14/2010.

The previous rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Takada et al (EP 1 160 346 A1, thereafter EP'346) is withdrawn in view of the amendment filed on 4/14/2010.

The previous rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable Masaaki et al (JP 2003105491 A1, thereafter JP'491) is withdrawn in view of the amendment filed on 4/14/2010.

However, upon further consideration, a new ground(s) of rejection is made as following.

Previous rejection of Claim 1 on the ground of nonstatutory obviousness type double patenting as being unpatentable over:

- 1) claims 1-7 of copending application No. 10/560989 in view of EP'346
- 2) claims 1-10 of copending application No. 10/558579 in view of EP'346
- 3) claims 1-3 of copending application No. 10/591919 in view of EP'346

are withdrawn in view of the amendment filed on 4/14/2010. However, upon further consideration, a new ground(s) of rejection is made as following.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (EP 1 160 346 A1, thereafter EP'346) in view of Kashima et al (US 7,090,731 B2, thereafter US'731).

Regarding claim 1, EP'346 teaches a high strength galvanized steel plate excellent in adhesion of plating and press working formability (title, abstract of EP'346). The composition comparison between the alloy of EP'346 (Abstract,

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claims 1-12, and Page 3, paragraphs [009]-[0010] of EP'346) and the alloy of the instant application is listed in the following table. All of the composition ranges except Si disclosed by EP'346 overlap the composition ranges of the instant claims. The lower limit 0.2wt%Si taught by EP'346 is just outside the upper limit of less than 0.2wt%Si as recited in the instant claim, which is a prima case of obviousness because there is no evidence to show the steel with 0.199wt%Si as claimed having an unexpected changing on properties comparing to the steel with 0.2wt%Si as taught by EP'346. MPEP 2144.05 I. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the compositions of C, Si, Mn, P, S, Al, Mo, N, B, and Fe as claimed in the instant claim 1 and further adding Ti, Nb, V, Cu, Ni, and Cr as claimed in the instant claim from the composition disclosed by EP'346, because EP'346 discloses the same galvanized steel plate throughout the disclosed ranges.

Element	From instant Claim 1 (in wt%)	EP'346(in wt%) (ref. Abstract, Cl.1-12)	Overlapping range (in wt%)
C	0.08-0.35	0.05-0.2	0.08-0.2
Si	Less than 0.2	0.2-2.0	--
Mn	0.8-3.5	0.2-2.5	0.8-2.5
P	0.03 or less	<0.03	<0.03
S	0.03 or less	<0.02	<0.02
Al	0.25-1.8	0.01-1.5	0.25-1.5

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Mo	0.05-0.35	<0.5	0.05-0.35
N	0.010 or less	<0.03	0.01 or less
B	0.0001-0.0030	0.0002-0.01	0.0002-0.003
Fe	Balance	Balance	Balance
	Optional		
Ti	0.01-0.03	<0.06	0.01-0.03
Nb	0.01-0.03	<0.06	0.01-0.03
V	0.01-0.03	<0.3	0.01-0.06
Cu	1 or less	<2	1 or less
Ni	1 or less	0.5-5.0	0.5-1
Cr	1 or less	<1	<1

Regarding the  $M_s(^{\circ}\text{C})$  equation (1) in the instant claim, which is fully depended on the composition ranges of the alloy. It is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D.357, 553 O.G.177; 57 USPQ 117, *Taklatwalla v. Marburg*. 620 O.G.685, 1949 C.D.77, and *In re Pilling*, 403 O.G.513, 44 F(2) 878, 1931 C.D.75. In the instant case, in the absence of evidence to the contrary, the selection of the proportions of elements: C, Mn, Ni, Cr, and Mo, from EP'346 in order to meet the claimed equation would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688.

EP'346 teaches 2vol.% to 20vol.% retained austenite and the structure including ferrite, bainite, and martensite (Page 6, paragraph [0024] of EP'346), which overlaps the 5vol.% to

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11vol.% residual austenite and reads on the ferrite, bainite and martensite phases as recited in the instant claim. EP'346 does not specify 3.5% to 10% of tempered martensite in the steel. US'731 teaches a high strength steel sheet having excellent formability (title and abstract of US'731). US'731 teaches a steel sheet suitable for plating application with the major composition ranges (claims 1-7 and Col.14, line 23-col.16, line 28 of US'731) overlap the composition ranges as recited in the instant claim. US'731 teaches controlling the retained austenite and the tempered martensite or tempered bainite by heating, cooling, holding, and further cooling processes (Fig.8A, 9-12 and tables for example table 38-39 of US'731). More specifically, US'731 teaches steel microstructure with 10% tempered martensite and 5% retained austenite (sample 15 in table 39 of US'731), which is within the claimed ranges of the tempered martensite and the retained austenite as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the microstructure of the galvanized steel through the heat treating process as demonstrated by US'731 for the steel of EP'346 in order to obtain a steel with both high strength and excellent formability (Col.1, lines 7-19 of US'731). Because EP'346 in view of US'731 teaches the similar high strength

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galvanized steel plate with similar microstructure as recited in the instant invention, the similar properties, for example high strength, excellent in plating adhesion, and hole expandability as claimed would be highly expected in the steel sheet of EP'346 in view of US'731. MPEP 2112.01.

Regarding the heat treating process limitations with the detail parameters in the instant claim, they are written in the product-by-process form. In the absence of structural characteristics imparted by the claimed process limitations, the claimed parameters related to the processes (annealing, cooling holding, and reheating) would not add patentable weight to the instant product claim. MPEP 2113 R1.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaaki et al (JP 2003105491 A1, thereafter JP'491) in view of EP'346.

Regarding claim 1, JP'491 teaches a high strength galvanized steel plate excellent in formability (title, abstract of JP'491). The composition comparison between the alloy of JP'491 (Abstract and claim 1 of JP'491) and the instant application is listed in the following table. All of the major composition ranges disclosed by JP'491 overlap the composition ranges of the instant claims, which is a prima facie case of



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obviousness. SEE MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the compositions of C, Si, Mn, P, S, Al, Mo, N, Fe and further adding Cu and Cr as claimed in the instant claim from the composition disclosed by JP'491, because JP'491 discloses the same utility throughout the disclosed ranges. JP'491 does not specify adding boron of from 0.0001 to 0.0030wt% in the steel. EP'346 teaches a high strength galvanized steel plate excellent in adhesion of plating and press working formability (title, abstract of EP'346). All of the major composition ranges disclosed by EP'346 (Abstract, claims 1-12, and Page 3, paragraphs [009]-[0010] of EP'346) overlap the composition ranges of the instant claim. US'346 teaches adding 0.0002 to 0.01wt%B in the alloy (paragraphs [0010] and [0020] of EP'346), which overlaps the boron range as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add proper amount boron as demonstrated by EP'346 in the steel of JP'491 because EP'346 teaches that boron is co-present with Cu and lowers the transformation point to inhibit precipitation of cementite and increase the volume percentage of retained austenite by delaying the progress of transformation (paragraph [0020] of EP'346).

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Element	From instant Claim 1 (in wt%)	JP'491(in wt%) (ref. Abstract, Cl.1-12)	Overlapping range (in wt%)
C	0.08-0.35	0.08-0.3	0.08-0.3
Si	1.0 or less	Less than 0.2	Less than 0.2
Mn	0.8-3.5	0.8-2.8	0.8-2.8
P	0.03 or less	0.03 or less	0.03 or less
S	0.03 or less	0.03 or less	0.03 or less
Al	0.25-1.8	0.25-1.8	0.25-1.8
Mo	0.05-0.35	0.05-0.3	0.05-0.3
N	0.010 or less	0.010 or less	0.01 or less
B	0.0001-0.0030	--	--
Fe	Balance	Balance	Balance
	optional		
Ti	0.01-0.03		
Nb	0.01-0.03		
V	0.01-0.03		
Cu	1 or less	1.0 or less	1.0 or less
Cr	1 or less	1.0 or less	1.0 or less

Regarding the  $M_s(^{\circ}\text{C})$  equation (1) in the instant claim, which is fully depended on the composition ranges of the alloy. It is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D.357, 553 O.G.177; 57 USPQ 117, *Taklatwalla v. Marburg*. 620 O.G.685, 1949 C.D.77, and *In re Pilling*, 403 O.G.513, 44 F(2) 878, 1931 C.D.75. In the instant case, in the absence of evidence to the contrary, the selection of the proportions of elements: C, Mn, Ni, Cr, and Mo, from JP'491 in order to meet the claimed equation would appear

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to require no more than routine investigation by those ordinary skilled in the art. In re Austin, et al., 149 USPQ 685, 688.

JP'491 teaches about 5% retained austenite and the structure also includes ferrite, bainite (Abstract of JP'491), which is within that the 5vol.% to 11vol.% residual austenite as recited in the instant claim. JP'491 teaches the conditions for the martensite generation, for example generating 3-5% martensite (paragraph [0042] of JP'491), which overlaps the range from 3.5% to 10% of tempered martensite as recited in the instant claim. Because JP'491 in view of EP'346 teaches the similar high strength galvanized steel plate with similar microstructure as recited in the instant invention, the similar properties, for example high strength, excellent in plating adhesion, and hole expandability as claimed would be highly expected in the steel sheet of JP'491 in view of EP'346. MPEP 2112.01. Regarding the heat treating process limitations in the instant claim, they are written in the product-by-process form. In the absence of structural characteristics imparted by the claimed process limitations, the claimed processes (annealing, cooling holding, and reheating) would not add patentable weight to the instant product claim. MPEP 2113 R1.

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***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claims 1-7 of copending application No. 10/560989 in view of US'731.

Although the conflicting claims are not identical, they are not patentable distinct from each other because, the instant claims and the conflicting claims define substantially the same high strength galvanized steel sheet. Claims 1-7 of copending application No. 10/560989 teaches the steel sheet containing ferrite and martensite structure as recited in the instant

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claims. Claims 1-7 of copending application No. 10/560989 does not specify the 5vol.% to 11vol.% residual austenite and 3.5-10% tempered martensite and bainite phases, US'731 teaches a high strength steel sheet having excellent formability (title and abstract of US'731). US'731 teaches a steel sheet suitable for plating application with the major composition ranges (claims 1-7 and Col.14, line 23-col.16, line 28 of US'731) overlap the composition ranges as recited in the instant claim. US'731 teaches controlling the retained austenite and the tempered martensite or tempered bainite by heating, cooling, holding, and further cooling processes (Fig.8A, 9-12 and tables for example table 38-39 of US'731). More specifically, US'731 teaches steel microstructure with 10% tempered martensite and 5% retained austenite (sample 15 in table 39 of US'731), which is within the claimed ranges of the tempered martensite and the retained austenite as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the working and annealing conditions as demonstrated by US'731 in the alloy taught by claims 1-7 of copending application No. 10/560989 in order to obtain a steel with both high strength and excellent formability (Col.1, lines 7-19 of US'731). Thus, no patentable distinction

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is seen between the alloy of the instant claims and that of the claims of copending application No. 10/560989 in view US'731.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claims 1-10 of copending application No. 10/558579 in view of US'731.

Although the conflicting claims are not identical, they are not patentable distinct from each other because, the instant claims and the conflicting claims define substantially the same high strength galvanized steel sheet. Claims 1-10 of copending application No.10/558579 teaches the steel sheet containing not more than 7Vol.% residual austenite which overlaps the claimed 5vol.% to 11% residual austenite as recited in the instant claims. Claims 1-10 of copending application No. 10/558579 does not specify structure of ferrite, martensite and bainite, US'731 teaches a steel sheet suitable for plating application with the major composition ranges (claims 1-7 and Col.14, line 23-col.16, line 28 of US'731) overlap the composition ranges as recited in the instant claim. US'731 teaches controlling the retained

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austenite and the tempered martensite or tempered bainite by heating, cooling, holding, and further cooling processes (Fig.8A, 9-12 and tables for example table 38-39 of US'731). More specifically, US'731 teaches steel microstructure with 10% tempered martensite and 5% retained austenite (sample 15 in table 39 of US'731), which is within the claimed ranges of the tempered martensite and the retained austenite as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the working and annealing conditions as demonstrated by US'731 in the alloy taught by Claims 1-10 of copending application No. 10/558579 in order to obtain a steel with both high strength and excellent formability (Col.1, lines 7-19 of US'731). Thus, no patentable distinction is seen between the alloy of the instant claims and that of the Claims 1-10 of copending application No. 10/558579 in view US'731.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claims 1-3 of copending application No. 10/591919 in view of US'731.

Although the conflicting claims are not identical, they are not patentable distinct from each other because, the instant claims and the conflicting claims define substantially the same high strength galvanized steel sheet. Claims 1-3 of copending application No.10/591919 teaches the steel sheet containing ferrite and by area ratio 5% to 60% of tempered martensite which overlaps the claimed 3.5-10vol% martensite as recited in the instant claims. Claims 1-3 of copending application No. 10/591919 does not specify structure of austenite and bainite, US'731 teaches a steel sheet suitable for plating application with the major composition ranges (claims 1-7 and Col.14, line 23-col.16, line 28 of US'731) overlap the composition ranges as recited in the instant claim. US'731 teaches controlling the retained austenite and the tempered martensite or tempered bainite by heating, cooling, holding, and further cooling processes (Fig.8A, 9-12 and tables for example table 38-39 of US'731). More specifically, US'731 teaches steel microstructure with 10% tempered martensite and 5% retained austenite (sample 15 in table 39 of US'731), which is within the claimed ranges of



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the tempered martensite and the retained austenite as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the working and annealing conditions as demonstrated by US'731 in the alloy taught by Claims 1-3 of copending application No. 10/591919 in order to obtain a steel with both high strength and excellent formability (Col.1, lines 7-19 of US'731). Thus, no patentable distinction is seen between the alloy of the instant claims and that of the Claims 1-3 of copending application No. 10/591919 in view US'731.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jie Yang/  
JY